

*Moral Status***7.1 Introduction**

As earlier chapters have discussed, morality generates obligations pertaining to nonmaleficence, autonomy rights, distributive justice, and beneficence. But to whom are these obligations owed? To address this question is to engage the concept of *moral status*.

Someone who gratuitously harms another person not only does something wrong; she also wrongs the victim. By contrast, someone who gratuitously destroys a beautiful painting or a functioning car does not wrong the painting or the car. If she acts wrongly it is because she wrongs other people who have legitimate claims over the objects in question. This is because persons have moral status whereas paintings and cars do not. Thus far what we have said is uncontroversial. What about nonhuman animals (henceforth “animals”)? We have an obligation not to be cruel to dogs, but does such cruelty wrong the dogs themselves, or does it wrong only persons such as the dogs’ caretakers? Are any animals persons? What about those human beings who are not persons on some definitions of the term – for example, embryos, fetuses, and individuals in irreversibly unconscious states? Do they have moral status? These are among the issues on which disagreement persists.

This chapter explores these and related questions. The discussion begins with the concept of moral status, unpacking its elements and commenting on its usefulness. It proceeds to a sketch of our account of moral status, which is presented in the form of five theses. The remainder of the theoretical portion of the chapter gradually elaborates and defends these theses, in part by contrasting them with and arguing against alternative positions. With our account in hand, we explore ethical implications for research involving human embryos, rodents, and great apes.

7.2 The Concept of Moral Status

What is moral status? Persons have it, paintings and cars do not, while dogs and fetuses might. To have moral status, an individual must be vulnerable to harm or wrongdoing. More specifically, a being has moral status only if *it is for that being's sake* that the being should not be harmed, disrespected, or treated in some other morally problematic fashion. So, if dogs have moral status, a compelling reason for not kicking dogs is that doing so harms them for no good reason. If, on the other hand, dogs lack moral status, kicking them would be wrong only insofar as it implicated the interests of other individuals, presumably persons.

These points are captured by this formal analysis: *X has moral status if and only if (1) moral agents have obligations regarding their treatment of X and (2) it is for X's sake that moral agents have these obligations.* In developing an account of moral status, we find it helpful to employ the concept of interests. If someone has an interest in something, then that interest can be promoted or set back, which means that matters can go well or badly for that individual with regard to that interest. We find it plausible that only beings with interests have moral status, such that *X has moral status if and only if (1) X has interests, (2) moral agents have obligations regarding their treatment of X, and (3) these obligations are based on X's interests.* We can explain the fact that paintings and cars lack moral status on the grounds that they lack interests. A plausible explanation for some people's belief that not only persons and sentient animals but also insentient animals and plants have moral status is that these people believe that all living things have interests. Meanwhile, much of the controversy over whether embryos and fetuses have moral status can be explained by differing opinions as to whether these prenatal human beings have interests – including an interest in surviving.¹

One might wonder about the usefulness of the concept of moral status.² Our formal analysis suggests that whatever we want to say about moral

¹ Some might construe the concept of moral status broadly enough to include sacred objects – such as shrines or idols – even if they do not have interests. On this broad construal, moral status characterizes anything whose properties provide basic or nonderivative reasons to moral agents to treat the thing in question in particular ways (e.g., respectfully). We are skeptical of the idea that sacred objects matter nonderivatively, given that attributions of sacredness vary so much across different cultures, religions, and nations. Instead, we think that someone's regarding an object as sacred may give that person a reason to treat it in a certain way based on the object's significance to them. It may also give others a reason to treat it in a certain way in virtue of the interests of the person who regards it as sacred. None of this implies that the object has some independent moral status.

² Benjamin Sachs, "The Status of Moral Status," *Pacific Philosophical Quarterly* 92 (2011): 87–104.

status could be stated instead in terms of interests, obligations, and the basis of obligations. Instead of saying, for example, that dogs have moral status, we could say that moral agents have obligations regarding how they treat dogs that are based on the dogs' interests. If it is possible to reduce the concept of moral status in this way, then perhaps it is redundant. What does the concept of moral status add? First, it adds a measure of convenience. One can make a single claim – say, that dogs have moral status – rather than spelling out the three specific assertions embodied in the claim. In addition, the concept of moral status captures the global idea of *a being's mattering inherently* – mattering in way that is not simply a function of instrumental value to other beings.

One might challenge the usefulness of the concept of moral status in a different way. One might argue that while the concept conveniently captures the idea of a being's mattering inherently, so does the more familiar notion of *moral rights*. If possessing moral status is simply a matter of having moral rights, it might be simpler to speak only of rights. We disagree, because our conception of moral rights does not imply that beings with moral status are necessarily the same as beings with moral rights (see Chapter 3).³ Indeed, the account we defend in this chapter attributes rights to only a subset of the individuals who have moral status.

7.3 A Sketch of Our Account

Our account of moral status advances five theses.

1. *All and only sentient beings have moral status.* The reason *only* sentient beings have moral status is that moral status requires having interests, which only sentient beings possess. The reason *all* sentient beings have moral status is that there is no justification for denying the moral importance of the interests of any being who has interests. For example, the principle of nonmaleficence would appear at first glance to apply to all beings who can be harmed, and, on our view, there is no compelling reason to restrict its application to only some beings who can be harmed.
2. *Sentient beings are subject to equal consequentialist consideration in the sense that (1) their comparable interests count or matter equally, and (2) utilitarian trade-offs among individuals' interests are permissible unless*

³ For an example of a theorist who conflates the two concepts, see Peter Carruthers, *The Animals Issue* (Cambridge: Cambridge University Press, 1992), 1.

prohibited by rights. Where two sentient individuals have roughly the same thing at stake, such as avoiding a moderate amount of pain, their interests count equally, so that, for example, it is as morally problematic to cause moderate pain in one individual as in the other. At the same time, if causing one individual moderate pain is necessary in order to prevent a greater amount of harm to another individual, sacrifice of the first individual's interest in avoiding pain is permissible unless they have rights that block such a trade-off.

3. *Different individuals have different interests and quantities of interests.* For example, a cognitively simple sentient animal may have interests in avoiding unpleasant experiences and having pleasant ones, but little else. A person ordinarily has these same interests and more – such as interests in having meaningful relationships with other people, completing valued projects, and living in accordance with their values. The person has a much broader array of interests than the cognitively simple animal. For this reason, equal consequentialist consideration would ordinarily accord a much higher priority to preserving the person's life.
4. *Some individuals have moral rights that block appeals to the greater good as justifications for sacrificing their interests.* In consequentialist reasoning, comparable interests count equally, but some individuals' interests may be sacrificed for a greater gain to others. Rights protect rights-holders from such trade-offs in a way that makes sense of the idea that *individual rights-holders* (not just their interests) count significantly and equally. We argue that persons have moral rights in virtue of having a narrative identity. Those sentient beings who have some nontrivial awareness of themselves over time but lack a full-fledged narrative identity have rights too, but the threshold for overriding them is lower.
5. *Some individuals who have moral status lack moral rights.* We hold, at a first approximation, that sentient nonpersons who lack self-awareness lack moral rights.

The next several sections elaborate and defend these central theses while considering a variety of alternative views about moral status.

7.4 Sentience as Necessary and Sufficient for Moral Status

The Relevance of Personhood

Every ethical theory that is respected today concurs with common morality that, whoever else may have moral status, persons do. Seeing no reason to

challenge this claim, we take it as axiomatic. Personhood, then, is *sufficient* for moral status. Is personhood also *necessary*?

As noted in several places in this book, the concept of a person is contested, and, therefore, who should count as persons is contested. In this book, we adopt a philosophical conception of personhood that traces back to John Locke. Locke wrote that the term *person* refers to “a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places.”⁴ This and many similar definitions emphasize temporal self-awareness – awareness of oneself as persisting over time – and the capacity to reason. For the purposes of ethics, including the need to develop a model of moral status, we find it most useful to interpret this concept of personhood in terms of “narrative identity.” A person is a being who has a narrative identity – a *relatively complex understanding of herself as persisting over time and as having an implicit life story*. Such individuals are agents with the ability to make and pursue plans; they have episodic memory (the ability to remember experiences from their own past). *Human* persons tend to be highly social and to view certain other individuals as figuring significantly in their own life stories. Human persons include at least all cognitively normal human beings beyond the toddler years. We argue in a later section that persons in our sense – individuals with narrative identities – have rights grounded in certain longer-term interests that such beings possess. We also argue, for different reasons, that certain other human beings should also be extended rights.

On our neo-Lockean account, persons include at least all cognitively normal human beings beyond the toddler years. But human newborns are not persons on this view, yet they surely have moral status. So personhood cannot be necessary for moral status.

One might reply as follows: some philosophers and nearly all lawyers and laypeople use the term “person” in such a way that includes newborns.⁵ From this standpoint of popular usage, the obvious moral status of human newborns is consistent with the idea that being a person is necessary for moral status.

These are fair points. However, they are consistent with the claim that personhood *as we have defined “person”* cannot be necessary for moral status. In addition, we think that there are compelling grounds for denying

⁴ John Locke, *Essay Concerning Human Understanding*, 2nd ed. (1694), Bk. II, chap. 27.

⁵ Among philosophers, see, e.g., Marya Schechtman, *Staying Alive* (Oxford: Oxford University Press, 2014).

that personhood is necessary that do not appeal to the moral status of newborns or any other human beings. We need only invoke the moral status of certain animals.

Consider an ordinary bird. Birds are not persons in our sense – or in any other sense that attempts to capture the ordinary descriptive sense of the term.⁶ Yet it is wrong to treat a bird cruelly. Imagine someone repeatedly beating a bird until she dies. Assume the bird was not attacking someone or providing some other possible justification for the violence. This is a clear instance of gratuitous and substantial harm – in a word, *cruelty*. We know cruelty is morally wrong. But why is it wrong in the present case? Is it because beating the bird would damage someone's property? Setting aside the question of whether birds can rightfully be considered property, we may stipulate that the bird is not a pet or a farm animal. She has no human caretaker or "owner." Might the wrongness come down to the fact that cruelty to animals offends the sensibilities of those who care about animals? This response is inadequate. First, the bird-thrashing could occur in circumstances in which one can be sure that no other person will learn about it – yet such secrecy would not defeat the judgment that the cruelty is wrong. Second, if birds truly lacked moral status, then it *would* seem permissible to consider birds in one's lawful possession as one's property. In that case, the possibility that cruelty to one's bird would offend others would seem insufficient to overturn the presumption that one may do as one pleases with one's property so long as one does not *harm* others who have moral status.

The only adequate explanation of the wrongness of cruelty to animals attributes moral status to its victims. Birds and many other animals have an experiential well-being that makes them possible victims of cruelty. All such sentient creatures have moral status. Yet not all of these animals are persons. So personhood cannot be necessary for moral status.

The Irrelevance of Species Membership

Personhood is sufficient but not necessary for moral status. What about membership in our species, *Homo sapiens*? Is being human in this biological sense necessary or sufficient for moral status? We have already partly

⁶ One might use the term "person" in a moralized sense to mean "being with full moral status." In this case someone who believes that all sentient beings have equal moral status would classify birds as persons. See, e.g., Gary Francione, *Animals as Persons* (New York: Columbia University Press, 2009).

answered this question by noting that animals can have moral status. So being human cannot be necessary. Might it be sufficient?

If so, then every member of our species would have moral status. This strikes us as implausible in some instances and as theoretically dubious. The idea that being human is sufficient for moral status implies that not only all postnatal human beings are persons, but so are fetuses and embryos. This will strike some people – but, to be sure, not some others – as counterintuitive. But the thesis in question also implies that human *corpses* (as members of our species) have moral status. Yet we hold that corpses – as distinct from the previously living human beings – do not have interests, so they cannot have moral status. Even if only *living* human beings count, this would still imply that living human beings whose neurological impairment precludes their ever having conscious experience – such as anencephalic infants – have moral status. We therefore find the attribution of moral status to all human beings, or even all living human beings, highly doubtful.⁷

There is also a theoretical difficulty: it is dubious that the biological factor of species membership can carry so much moral importance. To be a *Homo sapiens* is, from a biological standpoint, nothing more than being a member of a certain cluster of animals who share a particular evolutionary lineage. On its own this is not a reasonable basis for moral status. It would have to be something about the species in question – some characteristic of its members – that underlies human beings' moral status. But whatever the relevant characteristic is – whether personhood, moral agency, rationality, or something else – not all members of our species possess it, even potentially. It is certainly *characteristic* of human beings that they are, or develop into, persons, moral agents, rational beings, and so on, but not every human being does. One might claim that every member of our species is *of a kind* whose members characteristically develop in these ways.⁸ That is true. But every human being is a member of innumerable kinds, including many biological ones. For example, while every human

⁷ Ronald Dworkin argues that common attitudes about human beings and human death suggest that all human life is, in some important sense, sacred (*Life's Dominion* [New York: Vintage, 1993], chap. 3) – a thesis that might be understood to imply, in our terminology, that all human life has at least some moral status. Although Dworkin's discussion of common attitudes toward human life is insightful, we believe many of these attitudes represent prejudices or overgeneralizations that will not stand up under critical scrutiny. See also note 1.

⁸ See, e.g., Carl Cohen, "The Case for the Use of Animals in Biomedical Research," *New England Journal of Medicine* 315 (1986): 865–870.

being is a member of the kind *Homo sapiens*, each is also a member of the kinds hominid, primate, mammal, vertebrate, animal, organism, and so forth. It is arbitrary to single out species as the one biological kind that bears on moral status.

Sentience and Interests

Sentience is the capacity to experience feelings or, more precisely, to have at least some pleasant or unpleasant experiences. Feelings include conscious *sensations* such as pleasant tactile sensations, pain, discomfort, and nausea; *emotional states* such as excitement, delight, surprise, fear, and anxiety; and *moods* such as cheerfulness and irritability. A creature who is capable of having any of these feelings, even just pain, is sentient. Moreover, as we understand the concept of desire, creatures who can have desires are sentient. That is because having a desire for some state of affairs – say, one’s eating food – involves a tendency, or disposition, to feel satisfaction or other pleasant experiences at the satisfaction of the desire and to feel frustration or other unpleasant feelings at the frustration of this desire. Put another way, to have a desire for something involves caring about it, and caring is impossible without the capacity for pleasant or unpleasant experiences.

In Chapter 8, we argue that both enjoyment and the satisfaction of desires that are relevant to one’s life story are components of well-being. The argument just given implies that all and only sentient beings have interests that contribute to well-being. At a minimum sentient beings possess an interest in not experiencing pain, distress, or other unpleasant experiences – *suffering*, in a broad sense of the term. Our analysis of the concept of moral status suggested that having interests is necessary for having moral status. Moreover, we see no compelling reason to deny the moral importance of *any* being’s interests. The fact that an action would cause suffering seems like a reason not to perform the act. So having interests is also sufficient for grounding obligations in moral agents – at the very least, an obligation not to harm wantonly any being with interests. This means that having interests is sufficient for moral status.

To have interests in the sense we are discussing is to have a welfare or a stake in how things go for one. But for an individual to have a welfare means that matters can go better or worse for them *from the individual’s own point of view*. Only beings capable of consciousness can have a point of view in this prudential sense and so have interests. Hence we think all and

only sentient beings – whose consciousness features pleasant or unpleasant experiences – have interests and so have moral status.⁹

Which Beings Are Sentient?

In addition to (sufficiently mature) human beings, many animals are sentient. But which ones? Might plants also be sentient? Here a consideration of evidence is indispensable. The major types of evidence for particular types of mental states in nonhuman creatures are (1) behavioral evidence; (2) neuroanatomical evidence, in particular, the presence of a nervous system and brain parts associated with certain kinds of mental states; and (3) evolutionary-functional considerations.

Arguments for the attribution to nonhuman creatures of mental states involving sentience proceed from the premise that mature, typically developing human beings have the mental states in question. In each case, the reasoning takes the form of an argument by analogy – that a particular type of animal is similar enough to human beings in relevant ways to support an inference that members of that species can experience a particular mental state. For example, fish exhibit pain behaviors – that is, behaviors commonly associated with pain – in response to the application of a noxious chemical on their lips but decrease such behaviors after morphine is administered as an analgesic.¹⁰ In this respect, the fish's behavior is much like a human's, consistent with the idea that both can experience pain and that analgesia can ameliorate it. Consider another example. Human anxiety is mediated by benzodiazepines, and human brains have receptors for these compounds. Research has demonstrated that the brains of many other vertebrate species also have benzodiazepine receptors, providing some evidence that members of these species can experience anxious states.¹¹ This thesis is further supported when animals with these same receptors engage in apparently anxious behaviors in vaguely threatening situations featuring novelty. A third example features a disanalogy between

⁹ Some will insist that the biological “needs” of plants and insentient animals should qualify as interests, challenging our thesis that only sentient beings have interests and moral status. However, we believe such “needs” of insentient creatures have no more relevance to moral status than the “need” of a car to have gas. These entities need certain things *in order to function in their characteristic ways*, but the absence of any conscious, caring standpoint undermines the claim that they have a welfare and interests in any sense relevant to moral status.

¹⁰ Lynne Sneddon, “The Evidence for Pain in Fish: The Use of Morphine as an Analgesic,” *Applied Animal Behaviour Science* 83 (2003): 153–162.

¹¹ M. Nielsen, C. Braestrup, and R. Squires, “Evidence for a Late Evolutionary Appearance of a Brain-Specific Benzodiazepine Receptor,” *Brain Research* 141 (1978): 342–346.

humans and nonhuman animals. Many insects fail to display pain behaviors in situations where we would expect that animals who could feel pain would feel pain. For example, locusts, aphids, and mantids continue to feed while being eaten and insects will put their full weight on injured limbs.¹² Humans in similar situations would feel pain and display self-protective behavior such as trying to escape or inhibitory behavior such as reducing weight on an injured limb. The behavioral disanalogy motivates doubt that the insects in question experience pain.

Although we cannot give comprehensive details here about the scientific evidence for sentience or about the proper interpretation of that evidence, we believe that conclusions drawn from available evidence, judiciously interpreted, can be summarized as follows.¹³ There is overwhelming evidence that mammals and birds are sentient creatures. The evidence that reptiles are sentient is also quite strong; the evidence for amphibians, more intermediate. Meanwhile, the evidence that bony fishes and cephalopods (octopi, squid, and cuttlefish) are sentient is fairly strong. As for cartilaginous fishes such as sharks and stingrays, jawless fish such as lampreys and hagfish, and some invertebrates other than cephalopods such as crustaceans and insects, the evidence is mixed. For most other invertebrates (e.g., worms, jellyfish, urchins, sponges), the evidence suggests that they are probably not sentient. As for plants, although there is evidence that they can process information from their immediate environment and use that information to move their parts adaptively,¹⁴ we doubt there is any evidence that they actually *feel* anything. The present picture of sentience among known creatures leaves much uncertainty, but it suggests that many animals – including mammals and birds and probably many others as well – are sentient, have an experiential welfare, and therefore have moral status.

While sufficiently mature human beings are paradigm instances of sentient beings, what about very immature members of our species? Embryos and early fetuses lack sufficient neurological development to be sentient. Indeed, based on what we know about the neuroanatomy of pain,

¹² C. H. Eisemann et al., “Do Insects Feel Pain? A Biological View,” *Experientia* 40 (1984): 164–167. Note, however, that some studies report pain behavior – and its usual physiological foundation, nociception – in certain insects (see, e.g., Ewan Smith and Gary Lewin, “Nociceptors: A Phylogenetic View,” *Journal of Comparative Physiology* 195 [2009]: 1089–1106).

¹³ For a fuller discussion and overview of the evidence, see David DeGrazia, “Sentience and Consciousness as Bases for Attributing Interests and Moral Status: Considering the Evidence and Speculating Slightly Beyond,” in Syd Johnson, Andrew Fenton, and Adam Shriver (eds.), *Neuroethics and Nonhuman Animals* (New York: Springer, 2020), 17–31.

¹⁴ See Stanfano Mancuso and Alessandra Viola, *Brilliant Green* (Washington, DC: Island Press, 2015).

fetal sentience apparently does not emerge before the third trimester of pregnancy.¹⁵ Anencephalic fetuses and infants, moreover, are commonly assumed to be irreversibly unconscious and therefore insentient due to the complete absence of cerebral hemispheres in the brain.¹⁶

Potential

One difference between embryos and pre-sentient fetuses, on the one hand, and members of species that are incapable of developing sentience, on the other, concerns *potential*. Unless afflicted with an extraordinary neurological disability, human embryos and pre-sentient fetuses have the natural potential to develop into sentient human beings. We have argued that sentience is sufficient for moral status. Is (actual) sentience also necessary for moral status or might potential sentience be sufficient?

Part of our answer is that *potential sentience itself* is irrelevant to moral status. The fact that an embryo, for example, has the potential to develop into a sentient human being does no more to confer moral status on the embryo than the fact that a particular seed has the potential to develop into an apple tree means that the seed already has leaves. Being potentially X does not confer on an entity the status or characteristics associated with X.

While potential sentience per se is irrelevant to moral status, in our view *the actual likelihood of becoming sentient in the future* is relevant. This point requires careful explication. Consider a two-month-old fetus, which lacks sentience but could develop into a sentient individual. Our claim is not that what will happen in the future if the fetus becomes sentient will somehow, magically, confer moral status on the two-month-old fetus. Our claim concerns how to think in a helpful ethical way about the fetus. If we expect it to become sentient because the pregnant woman intends to carry it to term, then it makes sense to think of the fetus as already having moral status. If the pregnant woman abuses drugs or alcohol while pregnant, or a

¹⁵ See, e.g., Susan Lee et al., "Fetal Pain: A Systematic Multidimensional Review of the Evidence," *JAMA* 294 (2005): 947–954.

¹⁶ Bjorn Merker challenges this common assumption ("Consciousness without a Cerebral Cortex: A Challenge for Neuroscience and Medicine," *Behavioral and Brain Sciences* 30 [2007]: 63–134). Merker argues that while a functioning cortex (the outer layers of the cerebrum) may be necessary for normal consciousness in human beings, it may not be necessary for a more basic consciousness, which he claims is apparent in the behavior of certain children with hydrancephaly. Whatever the merits of Merker's argument, it is noteworthy that children with this condition, unlike anencephalic infants, retain some of their cortex.

partner physically abuses her in a way that injures the fetus, there is a high likelihood that the later sentient human being will suffer harm as a consequence. If instead the fetus is well cared for, there is a high likelihood that the later sentient human being will benefit as a result. For these reasons, we find it helpful to regard a pre-sentient fetus that is expected to become sentient as already having moral status. (In keeping with the thesis that all and only beings with interests have moral status, we might think of the fetus who is likely to become sentient as already having “derivative interests” – deriving from interests she is expected to have later as a sentient being – in conditions conducive to the later fulfillment of her interests.)

If some readers find this way of conceptualizing the moral status of such fetuses unhelpful, they might instead think of only the later sentient human being as having moral status and understand the wrongness of causing prenatal injury as resting on the expectation of *future* harm. It is not very important which way of conceptualizing the situation is adopted. Moral status, as we understand it, is not a real property that individuals possess. Rather, as suggested in our earlier analysis of the concept, talking about moral status is a way of talking about obligations regarding how to treat certain individuals and the basis of these obligations in the individuals’ interests.

However one prefers to conceptualize our view about fetuses that are expected to become sentient, our position plausibly implies that (intentionally or negligently) causing prenatal injury is wrong. Meanwhile, it does not imply that aborting a pre-sentient fetus is wrong, because there is no expectation that such a fetus will become sentient (see also Chapter 10).

Now consider human beings who had been sentient but have irreversibly lost the capacity for consciousness and therefore sentience. Do they have interests and moral status? According to our criterion, they do if, prior to losing sentience, they had preferences with implications for their treatment in their current state that are relevant to their life story (see Chapter 8). If, for example, Grampa had a strong preference not to receive life-support measures in a state of irreversible unconsciousness, then he has an interest that this wish be honored in his current state of irreversible coma.¹⁷ Because he retains this and perhaps other interests, despite his irreversible unconsciousness, Grampa has moral status. In

¹⁷ Our view does not imply that corpses have interests and moral status because we hold that we are essentially *living* beings, a thesis that entails that death ends our existence. A corpse or pile of ashes is the physical remains of one of us but not, strictly speaking, one of us in a state of death.

Chapter 8 we discuss in detail the interests of patients in irreversibly unconscious states.

7.5 Clarifying the Idea of Differences in Moral Status

We have argued that sentience is the basis for having moral status. More precisely, it is necessary and sufficient for having moral status that an individual is sentient, is expected to become sentient, or was sentient and had (narrative-relevant) preferences regarding their current treatment. Personhood is sufficient for moral status because persons are a type of sentient being. But some people think that there are different degrees, or levels, of moral status. Perhaps, then, sentience entails some minimal moral status, whereas personhood is necessary for *full* moral status. In this section we clarify this idea. The following two sections critically assess the alternative views regarding differences in moral status.

As a first approximation, views granting *equal consideration* to everyone with moral status assert equality of moral status, whereas views that embrace *unequal consideration* assert different degrees, or levels, of moral status. As explained in Chapter 3, equal consideration involves a commitment to ascribe to persons' prudentially comparable interests – interests where roughly the same thing is at stake for each individual – equal moral weight. Such equal consideration can take different forms. Utilitarianism demands equal consideration in the form of impartial utility calculation with the aim of maximizing overall utility. Human rights theories protect important interests more rigorously with rights-claims that (ordinarily) prohibit the sacrificing of some individuals' important interests for the common good. That each person's important interests are given equal protection by rights is a form of equal consideration. The religious idea that all human beings are "equal in the eyes of God" expresses in a different way this idea of moral equality among human beings.

If equal consideration applies not only to all persons but to all sentient beings, then it applies to many animals. This is where it becomes crucial to have a precise understanding of equal consideration as attributing equal moral weight to *prudentially comparable interests*. Members of different species have different interests based on their differing characteristics.

Consider, first, the stake that persons ordinarily have in their own survival. Setting aside cases in which death might be desired or desirable, most persons have a great interest or stake in remaining alive. Death ordinarily deprives an adult human of the many goods she would have had in her life had she continued to live: enjoyments, meaningful activities,

the continuation of valued relationships, opportunities to complete various projects, and so on. Now consider a healthy cat who is having a good feline life. Premature death would deprive the cat of whatever good her life would otherwise have contained, so it seems appropriate to judge that she, like the human, has an interest in remaining alive. But are the typical adult human's life-interest and the cat's life-interest comparable? Do they have roughly the same thing of value at stake in remaining alive? We think not: the person may be expected to lose more from dying prematurely and so would be harmed more extensively by death. In addition, the human will likely have a much deeper set of psychological connections to her possible future and for this reason may be judged to be harmed more extensively by death (as discussed elsewhere in this chapter and in Chapter 4).¹⁸

Now consider liberty – the absence of external constraints. Whether or not liberty has intrinsic value for an individual, it clearly has instrumental value insofar as it allows the individual to do more things he wants to do or values. Compare a significant external constraint – forced restriction within a single house – in the cases of a healthy adult human and a healthy cat, both of whom would like to do things outside the house and could do these things in reasonable safety. Both are harmed by the restriction of liberty. Yet it seems plausible to judge that (ordinarily) the human is harmed more by such confinement. The human, unlike the cat, is likely to have plans, projects, and relationships that require extensive liberty, suggesting that the human is cut off from more that is prudentially important than is the cat. So, while both the human and cat have an interest in liberty, their respective liberty-interests are not prudentially comparable.

Recall that equal consideration requires attributing equal moral weight or importance to comparable interests. Given our reflections about the differences between an adult human's and a cat's life-interests and the two beings' liberty interests, we can see that equal consideration does *not* require ascribing equal moral weight to the human's interests and the cat's. The human's interests would be more extensively set back by death or imprisonment. Even though it is pro tanto wrong to kill cats (when they have lives worth living) and to restrict cats' liberty (beyond what is necessary for their safety), the moral presumptions against killing and against severely constraining the liberty of typical adult humans are

¹⁸ This idea is developed in David DeGrazia, "Sentient Nonpersons and the Disvalue of Death," *Bioethics* 30 (2016): 511–519.

stronger. Equal consideration is compatible with certain differences in treatment in accordance with differences between the human's and the cat's interests.

Consider these and other examples of justified differential treatment together. It is generally worse to confine or kill humans than to confine or kill cats. If a situation required confining or killing members of one of these species, the cats would lose out. Ordinarily, it is problematic to treat mature humans paternalistically but not problematic to treat cats paternalistically. It is important to provide humans, but not cats, with formal education. Yet these points do *not* imply that humans have higher moral status than cats. For all of these justified differences in treatment are compatible with equal consideration, that is, with a commitment to give equal moral weight to everyone's comparable interests. The differences in justified treatment appear only because of *divergent interests* – for example, that persons have a greater stake in remaining alive than cats do, so that death harms persons more than cats.

According to views that assert *unequal consideration*, moral agents ought to attribute unequal moral weight to the comparable interests of different beings. For example, all sentient beings have an experiential welfare, including an interest in not suffering. Suppose that one has a view according to which cats have a different degree of moral status to humans. Unequal consideration would entail giving a cat's suffering less moral weight than a human's equal suffering. It would suggest, more generally, that each of the cat's interests matters less, morally, than each of the human's comparable interests, even though each has the same at stake. In this way humans have greater moral status than cats.

Unequal consideration can be conceptualized in several ways. According to one, persons deserve equal consideration whereas all other sentient beings deserve consideration that, while less than that due persons, is equal to the consideration due each other.¹⁹ This model features two *levels* of moral status. Another way of conceiving differences in moral status features a *sliding scale* of moral status in which, say, creatures with greater overall psychological complexity deserve greater moral consideration than creatures with less psychological complexity.²⁰ The sliding scale would

¹⁹ Jeff McMahan's ethical theory – which includes a “morality of respect” applying to persons and a “morality of interests” applying to all sentient beings – might be interpreted as taking this structure (*The Ethics of Killing* [Oxford: Oxford University Press, 2002]). If, however, the morality of interests as McMahan understands it assumes the form of equal consequentialist consideration, then his model approximates the one we defend later in this chapter.

²⁰ This sort of model is implicit in Mary Anne Warren, *Moral Status* (Oxford: Oxford University Press, 1997).

begin with the least psychologically complex of sentient creatures (perhaps a crustacean or a primitive fish) and ascend along increasing complexity and moral status before reaching a plane that represents persons' full moral status.

7.6 Against Unequal Consideration

Neutralizing Some Arguments for Unequal Consideration of Interests

One consideration that may seem to favor unequal consideration is the fact that most people apparently believe that human beings matter more than animals. Some people assert this judgment explicitly. Many imply the judgment through their acceptance of institutions that cause great harm to animals for human purposes. Animal husbandry, commerce in pets, horse racing, the use of animals in circuses, and animal research all cause extensive harm to animals for the sake of dining pleasure, entertainment, profit-making, and the advancement of human health. While the latter purpose is extremely important, the willingness to use animal subjects in ways that would be considered grossly unethical if applied to humans suggests that current animal research practices treat animals as though they had substantially lower moral status than human beings. Where the purposes for which animals are harmed are trivial (as with brutal training practices used to prepare elephants to perform tricks), the implication that animals have inferior moral status is conveyed that much more emphatically.

Despite the possible temptation of inferring from current practices and attitudes that animals *do* have less moral status, we consider this inference unfounded. Even large majorities of people are capable of making incorrect moral judgments. Indeed, considered objectively, the likelihood of error in making this judgment seems high. For one thing, people have a conflict of interest in judging about the moral status of animals: they are the ones making the judgment, yet they also stand to gain from the judgment that animals have inferior moral status due to the highly convenient implications of this thesis. Second, experience teaches us that people have a tendency to be biased against the interests of those they perceive to be very different from them.²¹ Much prejudice against people of color by Caucasians, against the poor by the wealthy, against people who are

²¹ For example, a robust literature on implicit race bias has emerged in recent decades. See, e.g., P. G. Devine, "Stereotypes and Prejudice: Their Automatic and Controlled Components," *Journal of*

regarded as “sexually deviant” by those who consider themselves sexually “normal,” and the like can be understood in these terms. And if certain people can seem very different and to be members of an “out” group to other people, it is even more likely that nonhuman animals would strike human persons as being less-deserving outsiders. Indeed, we evolved as omnivores – whose diet includes meat – and therefore as animal-killers, so it seems likely that we have a natural disposition to perceive animals as “fair game” for our use. Finally, animals lack the opportunity and power to protest the way that they are treated. They do not vote, or verbally protest, or write newspaper articles explaining how badly they are treated. Unsurprisingly, their suffering is easy to ignore. For these and similar reasons, we should *not* take majority opinion on the relative moral status of humans and animals as providing grounds for the thesis that there are, in fact, differences in moral status.

We should not take majority opinion on this matter at face value. However, some people who reject the status quo of animal usage and support stronger protections for animals still hold moral views that may seem to support differences in moral status. For example, some people think that, while killing animals is often morally wrong, killing persons is, ordinarily, morally worse. One might explain this considered judgment by subsuming it under the general thesis that persons matter more than sentient nonpersons. Yet, as we noted earlier, this judgment can instead be explained by reference to the plausible thesis that death ordinarily harms persons more than it harms sentient nonpersons. So we do not regard this judgment as ultimately supporting differences in moral status.

Another challenge to equal consideration invokes judgments about general obligations of beneficence. It seems appropriate to give priority to helping humans in need over helping wild animals in need. Assume, to simplify matters, that the needy in question have no special relationship to us: the humans are not family or fellow citizens, while the animals are not under our care. That we ought to make reasonable efforts to help human beings who lack the basic necessities of life, even if they are complete strangers in other parts of the world, is clear. Yet we do not seem to have any obligation to help animals in the wild. Arguably, the priority of

Personality and Social Psychology 56 (1989): 5–18; Anthony Greenwald, Debbie McGhee, and Jordan Schwartz, “Measuring Individual Differences in Implicit Cognition: The Implicit Association Test,” *Journal of Personality and Social Psychology* 74 (1998): 1464–1480; and Anthony Greenwald and Linda Krieger, “Implicit Bias: Scientific Foundations,” *California Law Review* 94 (2006): 945–967.

beneficence toward humans reflects the appropriateness of unequal consideration.

We believe, to the contrary, that equal consideration is consistent with prioritizing human beings in discharging our obligations of general beneficence. Both persons and sentient animals matter. If we could reasonably expect moral agents to assist all persons and sentient animals who needed help, then doing so would be obligatory. But there is too much need in the world for any reasonable expectation that moral agents address all of it. They may be selective in deciding which important causes to support. If all of the important causes individuals address respond to humans in need, that pattern of beneficence is not objectionable. On the other hand, we reject any claim that individuals who are discharging their obligations of beneficence *must* prioritize needy humans. If an individual wants to devote time, energy, and funds to the cause of assisting marine mammals or elephants in distress, that choice would be fine. So we find no significant challenge to equal consideration here.

Challenges to Unequal Consideration

Having neutralized some considerations that might seem to favor unequal consideration, we now present three major challenges to it: (1) an appeal to logical consistency and an associated problem of relevance, (2) the dubious coherence of the two-level and sliding-scale models, and (3) the problem of nonparadigm humans.

The first argument proceeds as follows. We agree that persons enjoy equal moral status. We also agree that sentient nonpersons matter and have at least some moral status. The question is whether to extend equal consideration to them. As a matter of logic, we should grant them equal consideration *unless some relevant different between persons and sentient nonpersons justifies giving them less than equal consideration*. No candidate for a relevant difference, we submit, succeeds in justifying unequal consideration and, consequently, differences in moral status. Appeals to such characteristics as personhood, autonomy, moral agency, and membership in *Homo sapiens* all founder on the problem of relevance discussed just below.²² Moreover, the examples of justified unequal treatment that are alleged to be inconsistent with equal consideration are best understood in

²² For a detailed critique of allegedly relevant differences that would justify unequal consideration, see David DeGrazia, *Taking Animals Seriously* (Cambridge: Cambridge University Press, 1996), chap. 3.

terms of differences in degrees of harm (justifying a stronger presumption against killing adult humans than against killing animals), discretion in fulfilling obligations to help those in need (supporting a prerogative to prioritize human causes), or other factors that are consistent with equal consideration. Without a difference between persons and nonpersons that explains why the interests of one matter less than the interests of the other, we should reject the view as likely based in prohuman prejudice.

The need for a deeper explanation is highlighted in a problem of relevance. The problem, or challenge, is to explain precisely why personhood (or any other putatively relevant characteristic) should confer higher moral status. By contrast, consider sentience and the different degrees to which different types of being can be harmed by premature death. Sentience is obviously relevant to moral status because it is the basis for subjective experiences and an experiential welfare. In this way, sentience grounds interests. Meanwhile, the plausible claim that persons ordinarily lose more from death than sentient nonpersons do is clearly relevant to the judgment that it is generally worse to kill adult humans than to kill cats. But what is the relevance of personhood to whether one's interests deserve equal consideration? If one denies that everyone deserves equal consideration, that claim implies that a person's suffering of some amount matters more, morally, than a cat's suffering of the same amount. By hypothesis, we are assuming that the person and cat are vulnerable to the same amount of suffering, so we cannot say (as when comparing life-interests) that the person has more at stake than the cat.

A second challenge to unequal consideration focuses on the prospects for its two major variants: the sliding-scale and two-level models. Neither appears theoretically stable. The sliding-scale model posits differences in moral status – more specifically, in how much weight one's comparable interests should receive – according to the differing degrees of psychological complexity among sentient beings. Yet if, as this model claims, persons have higher moral status than sentient nonpersons, then it is plausible that some sentient nonpersons, such as monkeys, have higher moral status than others, such as turtles. After all, monkeys are more cognitively and emotionally complex than turtles. If this is correct, then in order for the model to remain coherent we should also judge that persons who are more psychologically complex have higher moral status than persons who are less psychologically complex. This would mean that some human persons' interests would count more than other human persons' interests. But most of us confidently reject the notion that some human persons have higher moral status than others.

Might the two-level model of unequal consideration, which asserts equal moral status among persons, be a plausible alternative? We think not. If the greater capacities of persons justifies their having a higher moral status than nonpersons such that their comparable interests count more in consequentialist accounting, then among nonpersons the greater capacities of some of them (e.g., dogs) should justify having a higher status than others (e.g., mice). The two-level model risks collapsing into the sliding-scale model, which we have already argued is problematic. To block this move, an explanation must be given for why having some capacity or reaching some threshold of capacity makes such a difference to moral status. With no such explanation forthcoming, the view is unstable.

The third major challenge to any unequal-consideration account of moral status is the problem of nonparadigm humans. The problem will arise whatever property is supposed to confer higher moral status, be it personhood, autonomy, moral agency, the capacity for higher-level reasoning, or some other trait that most animals lack. Take, for example, the view that personhood confers higher moral status. Our conception of persons identifies them as beings with narrative identities. But many human beings who are widely thought to have full moral status do not yet have the cognitive capacities to have a narrative identity. On this view, it is not just mice, cats, dogs, and horses who will have lower moral status than human persons; it is also human infants, perhaps toddlers, and older human beings with late-stage dementia or other substantial cognitive incapacities.

How might a proponent of the view that personhood confers special moral status handle the case of ordinary infants? One natural strategy would be to claim that they enjoy special moral status on the basis of potential for personhood. However, this would imply that embryos and pre-sentient fetuses, which are also potential persons, have elevated moral status. Yet embryos and fetuses that never become conscious or sentient lack interests and therefore, we have argued, lack moral status entirely.

Appealing to potential does not satisfactorily address the problem of nonparadigm humans in the case of infants. Even if it did, this appeal could not possibly handle the case of someone – call him Fred – whose severe cognitive disability permanently prevents him from developing the capacities that would make him a person. Any unequal-consideration view that holds that cats' interests matter less than persons' comparable interests must – unless some novel solution is found – similarly judge that Fred's interests matter less than those of ordinary human adults.

A distinct strategy is to contend that social relations can ground moral status. One might claim that those who possess full moral status include not only persons but also those who enjoy special relationships with persons. Fred has full moral status, according to this view, not because he is a person – he is not – but because family members, friends and neighbors, and society confer on him the status and moral protections that ordinarily apply only to persons. In roughly this way, Mary Anne Warren has argued that moral status is a function not only of an individual's traits (e.g., sentience, personhood) but sometimes also of one's relations to others (being especially loved and protected by persons).²³ This approach might permit us to judge that all sentient humans have full moral status, whereas cats have only partial moral status.

Two major problems confront this response to the problem of nonparadigm humans. The first is conceptual. The concept of moral status attributes a kind of inherent value to certain individuals such that moral agents have obligations regarding their treatment of that individual. But inherent value *inheres* in an individual; it is based on the individual's characteristics. By contrast, relationships are not inherent to an individual; they are "external." So relationships cannot be a basis for moral status. This judgment fits with the plausible idea that a being's moral status gives moral reasons to *all moral agents* to treat that being in particular ways, whereas special relationships would provide moral reasons only to those who stand within the relationships.

Closely related to this conceptual challenge is an intuitive challenge to some implications of the present approach. Imagine a situation in which people do not have protective attitudes toward nonparadigm humans such as the severely cognitively impaired. Instead, people regard them as having only partial moral status, like a cat. The appeal to social relations as a response to the problem of nonparadigm humans implies that in this situation individuals with such impairments would have only partial moral status. If the difference in moral status between a person and a cat is judged to be large – as it is with unequal-consideration views of moral status – then humans with severe cognitive impairments would appear to be fair game for nontherapeutic, harmful research for the benefit of human persons. This is counterintuitive.²⁴

²³ Warren, *Moral Status*, chaps. 5 and 6.

²⁴ There have been other recent attempts to deal with the problem of nonparadigm humans in a way that preserves a difference in moral status between humans and other animals. We find none of them promising. See, e.g., Agnieszka Jaworska and Julie Tannenbaum, "Person-Rearing Relationships as a Key to Higher Moral Status," *Ethics* 125 (2014): 242–271; and Shelly Kagan, "What's Wrong with Speciesism?," *Journal of Applied Philosophy* 33 (2016): 1–21. For replies, see David DeGrazia, "On the Moral Status of Infants and the Cognitively Disabled: A Reply to

7.7 Defense of a Qualified Equal-Consideration Account

Given the challenges to unequal consideration, we believe that the only satisfactory option is to adopt a model of moral status that grants at least equal consequentialist consideration to all sentient beings. This makes room for several approaches, prominently including (1) utilitarianism (which in its direct form does not attribute rights to anyone and in its indirect form will do so insofar as recognition of such rights promotes overall utility); (2) an equal-consideration model that attributes rights to all sentient beings, which we call “the wide rights view”; and (3) a qualified equal-consideration account of rights for persons and utilitarianism for sentient nonpersons.²⁵ In Chapter 3 we rejected utilitarian ethical theories on the grounds that they provide implausibly weak moral protections for persons and demand implausibly strong sacrifices of moral agents in the service of maximizing utility. We focus here on the other two theoretical options and defend the qualified equal-consideration view, while acknowledging that no view is entirely free of difficulties.

The Wide Rights View

The wide rights view asserts equal consideration for all sentient beings, but also asserts rights for all beings with moral status. On this approach, infants and severely cognitively impaired humans enjoy the full protection of moral rights in virtue of being sentient. This would include a right to adequate protection from harm, which would preclude, for example, their use in highly risky nontherapeutic research.

While this view is plausible in its implications for nonparadigm humans, it has some counterintuitive implications in extending moral rights to all sentient animals and lacks an adequate justification for doing so. The intuitive cost of this view seems especially apparent to us in the context of pest control. Imagine that you have two children and your house has been invaded by rodents who are fairly likely to carry infectious diseases. Suppose also that nonlethal methods for removing the rodents have been unsuccessful. Many people, including many who are

Jaworska and Tannenbaum,” *Ethics* 124 (2014): 543–556; and David DeGrazia, “Modal Personhood and Moral Status: A Reply to Kagan’s Proposal,” *Journal of Applied Philosophy* 33 (2016): 22–25.

²⁵ In discussing this model of moral status we use “utilitarianism” (for sentient nonpersons) as shorthand for “equal consequentialist consideration,” even though the view we envision does not incorporate utilitarianism’s implausibly strong demand to maximize utility.

substantially in favor of animal protection, would judge it permissible to use lethal methods to remove the pests. We concur. We also believe that equal consequentialist consideration – utilitarian thinking – is a plausible framework for deciding what sorts of harms to the rodents would be justified in view of the improved household safety. Utilitarianism, we believe, could justify killing the rodents (for whom, we assume, death is a harm though much less of a harm than it typically is for persons) and some suffering if there is no way to remove or kill the pests painlessly. Yet, if the rodents had rights, this would include a right not to be sacrificed in the name of utility. So we find that in the context of pest control, utilitarianism is a more plausible guide than the wide rights view.

Another area in which the wide rights view strikes us as having dubious implications concerns our relationship to insects. Currently, we lack strong grounds for asserting that insects are sentient. But let us suppose that compelling evidence emerges for insect sentience.²⁶ If all sentient beings have rights, it would follow that we should take insect well-being quite seriously. I should, for example, be conflicted about whether it is permissible to kill a mosquito that lands on me. Moreover, and equally counter-intuitively, we should at present be very invested in the question of whether insects are sentient. For, if they are, then we are currently (if unintentionally) violating the rights of a huge number of beings with moral status. The commonsense judgment that we need not worry much about accidentally harming insects and about whether they are sentient suggests, the argument concludes, that if insects are sentient they nevertheless do not have rights that prohibit the trade-offs of welfare that utilitarianism permits.

One might wonder whether these intuitions regarding insects undermine not only the claim that they would have rights, if sentient, but also the claim that they would deserve equal *consequentialist* consideration. We do not think so. If it turns out that insects, or some types of insects, are sentient, their relatively primitive nervous systems make it likely that they are not *very* sentient – that is, that their capacity for feelings is relatively limited. They may be able to feel pain, for example, but it is doubtful that they would have the emotional capacity to experience great suffering – unlike persons and

²⁶ This possibility is not so far-fetched. Although, as noted earlier, the behavior of some insects suggests inability to experience pain, the overall evidence for insect sentience is mixed. For a robust argument that insects are characteristically conscious (and therefore possibly sentient), see Andrew Barron and Colin Klein, “What Insects Can Tell Us about the Origins of Consciousness,” *PNAS* 113 (2016): 4900–4908.

other relatively complex animals. Moreover, we doubt that death would (nontrivially) harm creatures with such minimal sentience. Killing a mosquito would not be a significant harm to it. It seems reasonable to us to expect moral agents to refrain from harming such animals gratuitously, but it also seems reasonable not to invest great effort or resources into avoiding harm to them – or to finding out whether they are sentient and capable of being harmed. When it comes to the possibility of insect sentience, utilitarianism seems rather plausible and rights against being harmed rather implausible.

In addition to having counterintuitive implications in the contexts of pest control and our interactions with insects, the wide rights view lacks an adequate justification for extending the special protections of rights to all sentient beings. Consider sentient animals whose psychological lives are relatively simple and do not feature any significant self-awareness over time. (Perhaps crabs are such animals.) Their well-being is presumably a function of their quality of life at a given time. With little or no sense of having a future, such a creature is not really “invested” in its future, so there is apparently no basis for attributing a right to life to such a creature. Moreover, without the narrative self-awareness that we argue below grounds rights as necessary protections, it is unclear why the interests of one cannot be substituted for the interests of another. In contrast to the wide rights view, the view we defend offers a plausible foundation for the rights it ascribes to those with substantial self-awareness.

The Qualified Equal-Consideration Model: A First Approximation

A first approximation of our preferred model of moral status is “rights for persons, utilitarianism for sentient nonpersons” or “qualified equal consideration.” This view affords all sentient beings equal consequentialist consideration, but affords only persons the additional protection of rights. We have argued that equal consequentialist consideration without rights is more plausible than the wide rights view in some contexts involving sentient animals such as pest control and our dealings with insects. Whether it is an adequate guide for our dealings with sentient nonpersons more generally remains to be seen. First, we need to consider qualified equal consideration’s basis for claiming that persons deserve not just equal consequentialist consideration but the additional moral protection of rights.

What is so special about personhood that it grounds rights, conferring on persons stronger moral protections than those of equal consequentialist consideration? Earlier in the chapter, we characterized a person as a being

with a *narrative identity* or *narrative self-awareness* – as found in typically developing human beings beyond the toddler years. On this conception, persons have substantial temporal self-awareness that allows for reflections on one's past, planning, and the understanding of one's life as comprising a sort of story with different parts.

Having a narrative identity is crucial to rights because it grounds the importance of what is sometimes called the “separateness of persons.”²⁷ To understand this point, imagine, once again, a population of sentient non-persons whose mental lives proceed largely from moment to moment. Though sentient, each has no memory of its past or expectations for its future. For such individuals, it matters little whether some future good (or bad) experience happens to one of them or to someone else. After all, these subjects don't know the difference between these possibilities because they lack a sense of themselves as having a life, with particular projects, extending over time. They are in this way more “replaceable.” Consequently, it makes sense that an ethical theory would treat such individuals as subject to trade-offs of welfare, where a greater gain to one individual justifies imposing a smaller loss on another. (Later we will consider sentient beings who lack narrative identities yet possess some nontrivial self-awareness over time. For the moment a sharp contrast is illustrative.)

Persons, on the other hand, who possess a narrative identity, have a substantial interest in the protections afforded by rights. These protections permit persons to pursue plans and projects, over considerable stretches of time, free of the insecurity that the prospect of utilitarian trade-offs can threaten. Suppose Abe's most cherished project is to start a family with his partner, nurture his children as they grow up, and enjoy family life. Abe has just become a father. But imagine that his nation's Olympic team conscripts Abe – who was a world-class rower in college but recently quit rowing – to train for the Olympics, for the good of his country and the sport. The training takes him far away from home, badly damaging his project of sustaining a certain type of family life. Here it is precisely Abe's narrative identity that engenders the longer-term interests – indeed, central life aims – that are threatened, and defeated, by violation of his autonomy rights. These and other rights (e.g., pertaining to nonmaleficence and justice) afford persons reasonable protections to live in security and pursue their dreams. The protection of rights, thus understood, is closely

²⁷ John Rawls influentially used this phrase in *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971).

connected to the special interests and vulnerabilities stemming from robust, longer-term self-awareness. Thus, personhood – construed in terms of narrative self-awareness – is a plausible ground for rights.

In this way, our view can address the problem of relevance. The relevance of personhood is its connection to longer-term interests that are often central to flourishing. These special interests mark off persons as significantly “separate” from each other and meriting special protections, which rights supply. Sentient beings who lack significant self-awareness over time have interests, but these interests do not involve longer-term investment and realization. So it makes sense, we submit, to regard these individuals as subject to consequentialist trade-offs in welfare. Thus, as a first approximation, “rights for persons, utilitarianism for sentient nonpersons.”

How well does this view handle the problem of nonparadigm humans? Note, first, that the problem of paradigm humans confronting the view is relatively small. That is because, unlike the unequal-consideration views that we rejected, it embraces equal consequentialist consideration for all sentient beings. Equal consequentialist consideration is a substantial form of moral protection – essentially the protection of direct utilitarianism, which gives everyone’s comparable interests equal moral weight. Although such equal consideration falls short of the protections afforded by rights, it affords far greater protections than animals have today in the research setting (which, in turn, is much more extensive than the protections of animals in industrial agriculture). For example, as we discuss below, utilitarianism will not permit the harming of mice for research purposes unless (1) the research is so promising that the expected benefits are greater than all projected costs and anticipated harm to the mice and (2) there is no alternative method that offers a better benefit/cost ratio. Considering the difficulties of successful translation from mice models to clinical medicine for humans, this utilitarian demand is actually very difficult to meet. Nevertheless, it can be met – in principle and, we believe, sometimes in practice. The problem of nonparadigm humans has been significantly reduced, but not eliminated. Let us therefore consider what the present approach can say, first, about ordinary infants and then about permanently, severely cognitively impaired individuals.

Does qualified equal consideration permit using infants for the benefit of society, say, in harmful, nontherapeutic research? Ordinary infants, although not yet persons, are expected to grow into persons. We believe this expectation provides some reason to ascribe to them the same moral status as persons. Persons have a central interest in being able to live their

lives in ways that they find meaningful and satisfying (see Chapter 8). Doing so requires an ability to develop, gradually as they mature, their own values and priorities and, eventually, the opportunity to pursue their own life plans. Now suppose we treated infants as having lower moral status than persons. Although, as just discussed, they would still receive the protections afforded by equal consequentialist consideration, infants would be somewhat more available for involuntary use in the name of the common good – say, in early tests of a potential vaccine in a highly lethal epidemic. Suppose also that an infant is significantly injured in such testing, but not so much to preclude later developing into a person. Then if the effects of the injury interfere with the ability of the later person to pursue their plans and projects, then causing the injury will violate the rights grounded in their narrative identity. The interests that will ground rights in the future person now derivatively ground rights in the present infant.

In addition to this theoretical justification for ascribing moral rights to ordinary infants despite their not (yet) being persons, there are solid practical grounds for including them – as well as severely cognitively impaired humans – within the realm of legal rights-holders. The law is unlikely to operate successfully if it affords one level of protection to persons and a lower level of protection to postnatal human beings who are not yet persons. Rather than draw a line for legal purposes at the onset of personhood – which would be maddeningly difficult and contentious – the law operates better in granting rights to all (living) postnatal human beings, a *clearly demarcated* class of individuals. The amount of confusion and distress that would result if we permitted infants and toddlers, or even just infants, to be considered for risky nontherapeutic research is likely very great in anything resembling human societies as we know them today. Hence a pragmatic reason to ascribe all postnatal human beings legal rights, including rights against harms that are not balanced by compensating benefits to the rights-holder. In brief, the social benefits of assigning rights to infants are great whereas the social costs of doing so are modest to negligible. In addition, as mentioned in the previous paragraph, we believe there is a principled (not merely pragmatic) basis for attributing rights to infants.

Our response to the problem of nonparadigm humans leaves two noteworthy gaps. First, ordinary infants who are not expected to grow into persons – either because they have a terminal illness or because they will be subject to infanticide – would not be covered by our principled defense of rights for infants who are expected to become persons. Second,

the pragmatic argument in favor of legal rights for all living, postnatal human beings is contingent upon a society's having sensibilities and attitudes that are best served by this sort of blanket rights-coverage. Other societies might not be so troubled by the selective conscription for the common good of severely cognitively impaired individuals or unwanted infants who are not expected to become persons. In such societies, they would not enjoy the protections of rights. This implication is a theoretical pill we have to swallow in defending the present view. It is worth stressing, however, that this pill is only slightly bitter due to the substantial protections afforded to all sentient beings by equal consequentialist consideration and our pragmatic reply to the problem of nonparadigm humans for societies like those that currently exist.

It merits emphasis that the problem of nonparadigm humans is a challenge to all models of moral status that ascribe moral status on the basis of sentience but do not assign rights to all sentient beings. The wide rights view alone escapes this problem. We have explained why we do not accept this view, though we acknowledge that there are considerations in its favor. Direct utilitarianism has the same problem of nonparadigm humans as our view has *plus a "problem of paradigm humans"*: the counterintuitive implications of this view's withholding of rights *even from persons*. Meanwhile, unequal consideration views fare *considerably worse* than our view by this measure because they afford less than equal consequentialist consideration to nonparadigm humans in implying differences in moral status between those who have their favored property (e.g., personhood, moral agency, autonomy) and those sentient individuals who lack it.

The Problem of Gradations and a Modification of Our Account

"Rights for persons, utilitarianism for sentient nonpersons" enjoys a number of theoretical strengths as an account of moral status. It embraces equal consequentialist consideration for all sentient beings, thereby improving on unequal-consideration models. It has more plausible implications than the wide rights view in the contexts of pest control and our relationship to insects (and perhaps our dealings with animals more generally). This account also offers a cogent rationale for ascribing rights, which protect against utilitarian trade-offs, to persons. Finally, it does relatively well in response to the problem of nonparadigm humans.

There remains a "problem of gradations." This challenge confronts any theory that asserts higher moral status – or, as in our account, stronger

moral protections – for some beings than for others when the property that is supposed to justify the higher status or stronger protections comes in gradations. Any such theory features a mismatch between (1) a discontinuity in moral status or protections and (2) the natural continuities that underlie the putatively relevant property. For example, a traditional view of moral status might hold that all and only persons are rational and, on this basis, have moral status. This picture treats rationality as all-or-nothing. Yet it is more plausible to regard rationality as coming in gradations. So this traditional view rests on a false dichotomy between rational and nonrational beings. Although a defender of the view might select some degree of rationality that counts as just enough for moral status, such line-drawing would appear arbitrary given the gradations of rationality that characterize human beings and other cognitively complex animals.

On our account, while all sentient beings should receive equal consequentialist consideration, persons have the additional protection of rights. The increase in moral protections is justified by personhood where that is understood in terms of having a narrative identity – as found in ordinary human beings beyond the toddler years, who can think linguistically and have a sense of their own lives as constituting a sort of story. The problem is that temporal self-awareness is not all-or-nothing. Even if we judge, say, that an average two-year-old child does not yet have a narrative identity, she certainly has some temporal self-awareness, some sense of herself as a subject with a past and future, ongoing relationships, and so on. The same is true of most dogs. One possible response is to lower the bar for what counts as a person in order for these somewhat self-aware beings to qualify.²⁸ But this response is inadequate because it simply draws a line in a different place; a more accurate picture would display a substantial gray area rather than a line. Narrative identity is supposed to ground rights because it makes one's well-being a cross-temporal affair: one has an interest not only in immediate experiential well-being but also in protection of one's ability to pursue distinctive longer-term goals and plans. But this interest applies *to some extent* if one has *any* significant temporal self-awareness. A two-year-old toddler who is working on toilet training may want to do a "good job" today so his mother will be pleased with him

²⁸ According to one interpretation of Tom Regan's animal rights view, he is lowering the bar for personhood, although he employs the term "subjects-of-a-life," so that it includes all individuals who have some temporal self-awareness – in his estimation, at least all normal mammals one year or older (*The Case for Animal Rights* [Berkeley: University of California Press, 1983]).

when she comes home from work. Your pet dog may find a tasty bone outside and hide it in the backyard – remembering that in the past you have taken away such treats – with the intention of returning to it later when you are not present. Our account, so far, does not acknowledge the varying gradations of temporal self-awareness.

Our response is to modify qualified equal consideration. Persons, on the modified account, have rights as they have been understood so far: full-fledged rights that usually deflect appeals to utility as grounds for overriding an individual's important interests. Those sentient nonpersons who lack any significant temporal self-awareness remain covered by equal consequentialist consideration. The modification in our account, in response to the problem of gradations, is to accord *weaker rights for self-aware beings whose self-awareness falls short of a narrative identity*. These rights would vary in strength in accordance with the degree of temporal self-awareness of the beings in question (for example, elephants appear to have more self-awareness than cats). As we discussed in Chapter 3, rights have thresholds. This means that a right can be overridden by consequences that are sufficiently important. A right that is weaker is simply a right with a lower threshold, such that it is easier to justify overriding it.

As we conclude the presentation and defense of our account of moral status it will be helpful to anticipate a conceptual question: Does our account, in the end, assert differences in moral status? The answer depends on how one understands the latter phrase. If “differences in moral status” is understood to mean that some beings with moral status are entitled to less consequentialist consideration than others, then the answer is “no.” If, on the other hand, attributing moral rights to only some sentient beings is understood as ascribing a higher level of moral status, then, yes, our account asserts some differences in moral status among beings who have moral status.

With this theoretical background, we proceed to examine the ethics of research with three very different scientific models: embryonic stem cells, rodents, and great apes.

7.8 Embryonic Stem-Cell Research

Stem cells have the potential to develop into many different cell types in the body.²⁹ In some organ systems, they provide a sort of internal repair

²⁹ For a helpful introduction to the science of stem cells, see National Institutes of Health, “Stem Cell Basics” (available at <https://stemcells.nih.gov/info/basics.htm>; accessed September 28, 2020).

system, dividing indefinitely to replenish other cells as long as the person or animal remains alive. For example, in the human gut and bone marrow stem cells regularly divide to repair or replace damaged tissues. In other organs, such as the heart, stem cells divide only under special conditions. Whenever a stem cell divides, each new cell has the potential either to remain a stem cell or to become a functionally more specialized cell such as a brain cell, a red blood cell, or a muscle cell.

For our purposes, we may distinguish three types of human stem cells: embryonic stem cells (ESCs), nonembryonic “adult” stem cells, and induced pluripotent stem cells (iPSCs). Adult stem cells are undifferentiated cells found throughout the body that divide to replenish dying cells and renew damaged tissues or organs. The job of adult stem cells is already relatively specialized, determined by the organ system to which they contribute. Induced pluripotent stem cells are adult cells that through deliberate intervention have been genetically reprogrammed to a functional state similar to that of embryonic stem cells. In particular, they retain some of the potential to become different types of cells – hence the term “pluripotent.” Although scientists’ ability to transform adult stem cells into iPSCs is a relatively recent development, they have already been used for drug development and disease modeling, and they may prove useful in transplantation medicine. What makes iPSCs special is that they are induced to recapture much of what makes embryonic stem cells unique and more scientifically and medically valuable than ordinary adult stem cells. And what makes ESCs so valuable is their potential to develop into a wide variety of cell types.

Embryonic stem cells are stem cells derived from an embryo’s functionally undifferentiated inner mass cells. These stem cells are pluripotent, meaning they retain the potential to differentiate into all the cell types that make up the body. ESCs are thought to have immense therapeutic potential due to their ability to develop into and produce a virtually unlimited supply of specific needed cell types. Such diseases and conditions as diabetes, heart disease, spinal cord injury, vision and hearing impairments, Duchenne’s muscular dystrophy, and Parkinson’s disease may someday be treated successfully through the transplantation of cells generated from ESCs. Because ordinary adult stem cells lack this regenerative potential, and because it is unknown to what extent iPSCs may duplicate this potential, scientists regard embryonic stem cell research as an area of enormous importance.

The derivation of embryonic stem cells requires destroying a human embryo five to nine days after fertilization. If, as some people believe, embryos have full moral status – on the strength of the assumption that each of us comes into existence at conception (fertilization) and has full

moral status throughout our existence – then destroying the embryo would be tantamount to intentionally killing “one of us.” In that case, ESC research would seem to require the unethical violation of embryos’ right to life. If, as other people believe, embryos have *partial* moral status – some but less than persons have – then ESC research may or may not be ethically permissible, depending on such factors as how one interprets the idea of their partial moral status, how much promise one ascribes to iPSC research, and the like. If, however, embryos have no moral status, then this fact would presumably pave the way for a straightforward ethical justification of ESC research.

On the view we have defended, embryos used in ESC research lack moral status. Because the developing human organism does not achieve neurological development sufficient for sentience until sometime in the third trimester of pregnancy, embryos are not sentient. Moreover, because the research embryos in question will not be implanted into a woman’s uterus and permitted to develop to the point at which they would achieve sentience, they do not satisfy our criterion for moral status. They are neither sentient nor expected to become sentient. Therefore, they lack interests and moral status. In our view, there is no significant objection in principle to ESC research. Assuming its scientific and biomedical promise justifies its costs, the only significant objection we can imagine is that iPSC research is *equally* promising and has the advantage of not offending the moral sensibilities of those who believe (incorrectly, in our view) that embryos may never be destroyed for research purposes. At this time, however, it is premature to judge that iPSC research really is as promising as ESC research, so we submit that continuing the latter body of research is morally justified *at least* until we can determine the relative promise of iPSC research.

7.9 Research with Rodent Subjects

Rodents comprise a mammalian order that includes rats and mice, the vertebrates most commonly used in biomedical research, as well as hamsters, guinea pigs, and other species. It is difficult to find reliable data about the numbers of animals used in biomedical research, but according to a 2005 report by the Nuffield Council on Bioethics, globally somewhere between 50 and 100 million vertebrate animals are used each year.³⁰ Judging from countries where statistics on rodents are available, between

³⁰ *The Ethics of Research Involving Animals* (London: Nuffield Council on Bioethics, 2005), 7.

75 and 90 percent of these vertebrate subjects are rodents.³¹ The major purposes for which rodent subjects are used are basic research into mammalian biology, the study of specific diseases and development of medicines to treat them, and safety assessment of chemicals such as household and industrial chemicals, fertilizers, herbicides, and food additives. These experiments nearly always impose nontrivial harms on their subjects, including pain, distress, injury, disease, and sacrifice at the termination of studies. Being sentient creatures, rodents have moral status. Does their moral status preclude their use in nontherapeutic research that harms them?

It is impossible to answer this question in a simple way due to uncertainty regarding three matters: the extent (if any) of rodents' temporal self-awareness, their utility as scientific models, and the scientific value of alternative models. Let us nevertheless engage the question from the standpoint of our account of moral status. For the purposes of discussion, we will assume that rodents have very little, if any, temporal self-awareness. That is, their self-awareness is insufficient to ground rights. So our analysis of the ethics of using rodents in research will be utilitarian.

The utilitarian standard sets a high bar. This may seem surprising in view of the fact that mainstream defenders of animal research often assert that the status quo enjoys the support of utilitarian thinking. They are mistaken, for several reasons.

First, as noted earlier, utilitarianism requires impartial (consequentialist) consideration of individuals' prudentially comparable interests. This means, for example, that causing fifty mice moderate pain cannot be justified unless the expected benefit from the research study – where expected benefit is a function of both the magnitude of the benefit, if it is realized, *and the probability of actually realizing it* – exceeds the disvalue of the fifty mice's moderate pain. Moreover, that the expected benefits must exceed the expected costs – including harms to animal subjects and financial expenditures – is only a necessary condition for ethical justification. The animal study in question must also offer greater expected net benefits than all reasonable alternatives. Such alternatives include the use of nonanimal methods (e.g., tissue cultures, computer models, 3D organ simulations), proceeding directly to studies with human volunteers, or forgoing the clinical research because the knowledge it seeks is not important enough to justify associated costs.

³¹ Ibid., Appendix 2.

A second reason the utilitarian standard sets a high bar for animal research is that on the cost side of the benefit/cost reckoning we must include any harms or losses to animals incurred as a result of inadequate housing, social isolation, and other factors in addition to experimental procedures. Such costs are often substantial. Where experimental design does not require such costs (e.g., little room for moving around), they can be avoided, but often only by increasing other costs (e.g., those associated with larger enclosures). Moreover, these costs, like the financial costs, are typically known in advance and certain to occur, unlike the hoped-for benefits of animal trials.

In addition to these challenges to a utilitarian justification for research involving rodents, there is a daunting epistemological challenge: determining that rodent subjects are good models for human responses, disease, and biology. The biomedical community has generally *assumed* that rodents and other animals provide good bases for predicting human response. When this assumption has been challenged, proponents of animal research have often offered anecdotes in which animal research has been part of the pathway to important biomedical breakthroughs.³² Of course, cherry-picking apparent successes does nothing to show the utility of animal models because, with a large number of animal trials, it is virtually guaranteed *as a matter of chance* that some will precede clinical trials that lead to important discoveries. (One can see this point by imagining coin-tossing as a basis for predicting efficacy in particular medicines: if we treat “heads” as a positive result and proceed to clinical trials on this basis, some of those trials will demonstrate efficacy, inviting the naïve impression that the coin-tossing offered successful predictions in those cases.) Moreover, even if we assume there are cases in which animal trials provide critical information, it does not simply follow that the studies were *necessary* for obtaining the information; there might have been alternative (nonanimal) routes to the same destination. There is, in fact, little rigorous scientific evidence bearing on the efficacy of animal research. What evidence exists in the form of meta-analyses or systematic reviews does not make rodent models look very impressive.³³

³² See, e.g., Stephen Schiffer, “The Evolutionary Basis for Animal Research,” in Jeremy Garrett (ed.), *The Ethics of Animal Research* (Cambridge, MA: MIT Press, 2012), 31–49, at 38–41.

³³ See, e.g., Pablo Perel et al., “Comparison of Treatment Effects between Animal Experiments and Clinical Trials: A Systematic Review,” *British Medical Journal* 334 (2007): 197–200; H. B. van der Worp et al., “Can Animal Models of Disease Reliably Inform Human Studies?,” *PLOS Medicine* 7 (2010) (doi.org/10.1371/journal.pmed.1000245); Junhee Seok et al., “Genomic Responses in Mouse Models Poorly Mimic Human Inflammatory Diseases,” *PNAS* 110 (2013): 3507–3512;

In view of our current state of knowledge, it is an open question whether rodents provide good models for human disease and response. Of course, the answer to this question might not be a simple “yes” or “no” that applies to all research involving rodents. Perhaps rodents provide good models for some research purposes and poor models for others. In any case, the utilitarian justification for using rodents depends on the assumption that a particular use of them (e.g., to test new drugs for heart disease) is sufficiently reliable to be part of the approach with the highest expected utility.

Meanwhile, the science of alternatives to the use of animals – including rodents – is fast developing.³⁴ Ironically, there has long been an expectation that alternatives to animal models be proven reliable, even though the animal models that supposedly set the benchmark were never held to this expectation. We think it is time for the biomedical community to be more scientific in advancing claims about the reliability of particular animal models, as well as nonanimal alternative methods. Moreover, from any reasonable perspective it makes sense to invest more heavily in the exploration of possible alternatives to animal research – both in order to achieve scientific and medical benefits without harming animals and because alternative methods are often faster and cheaper than animal models.

Our view of moral status implies that a great deal of rodent research is ethically unjustified. Nevertheless, it does not rule out all rodent research, some of which does not harm or pose significant risks to subjects either in experimental procedures or in conditions of housing, handling, and so forth. This is true, however, only if the subjects’ basic needs are met in captivity. Laboratory studies that avoid significant risk of harm while meeting rodent subjects’ basic needs might include studies that investigate their cognitive capacities and genetic studies that involve a small number of blood draws.³⁵

and Pandora Pound and Michael Bracken, “Is Animal Research Sufficiently Evidence Based to Be a Cornerstone of Biomedical Research?,” *British Medical Journal* 348 (2014) (doi:10.1136/bmj.g3387).

³⁴ See, e.g., National Research Council, *Toxicity Testing in the 21st Century* (Washington, DC: National Academies Press, 2007); Geoff Watts, “Alternatives to Animal Experimentation,” *British Medical Journal* 334 (2007): 182–184; Francis Collins, “Reengineering Translational Science: The Time Is Right,” *Science Translational Medicine* 90 (July 6, 2011): 1–6; M. Leist et al., “Consensus Report on the Future of Animal-Free Systemic Toxicity Testing,” *Altex* 31 (2014): 341–356; and T. Burt et al., “Microdosing and Other Phase 0 Clinical Trials: Facilitating Translation in Drug Development,” *Clinical and Translational Science* 9 (2016): 74–88.

³⁵ It is worth noting that three categories of animal research are easily justified on our view, though they are unlikely to involve rodents as subjects: (1) research on insentient animals, (2) noninvasive observational studies of animals in the wild, and (3) therapeutic veterinary research, in which it is in

Our model of moral status might also justify some research uses of rodents beyond the relatively innocuous sort just described. Perhaps, for example, testing a new vaccine for a deadly infectious disease on rodents before moving to clinical trials is, in light of the strength of the rodent models and the lack of viable preclinical alternatives, the approach offering the greatest expected utility. If so, this model of moral status would permit it.

In addition to having these implications regarding the use of rodents in biomedical research, our model has an important global implication. Traditionally, there has been a presumption that animal studies should precede clinical trials involving humans, with certain exceptions (e.g., where the clinical trials pose no significant risks). Our account of moral status reverses the presumption in the case of all sentient animals: there should be a presumption *against* using such animal subjects. The burden of justification lies with those proposing to conduct a research study that is expected to harm its animal subjects.

7.10 Research Involving Great Apes

The great apes include chimpanzees, bonobos, gorillas, and orangutans. Along with dolphins, porpoises, and perhaps other cetaceans (whales), they are the most cognitively, emotionally, and socially complex nonhuman animals.³⁶ Some scholars have argued that great apes are actually *persons* and, accordingly, have rights to life, liberty, and freedom from torture.³⁷ Having defined personhood in terms of narrative self-awareness, we do not believe there is sufficient behavioral evidence to support a claim that great apes typically have this capacity, and so we will not join those who confidently assert the personhood of these animals. On the other hand, we find strong evidence that great apes are significantly *person-like*.

animal subjects' interest to participate. In the third category we are *not* referring to research that involves intentionally harming subjects by injuring them or giving them an infectious disease and then studying methods of treating the injury or disease. Rather, we have in mind cases in which animals who independently have health problems are entered into trials in an effort to help them while studying experimental treatments. For example, some dogs are prone to epileptic seizures. An experiment might involve two study arms in which dogs are brought into a lab by their human caretakers: one arm studying a standard therapy (the experimental control), the other arm studying a promising new therapy. In this instance, it is in the dogs' interests to enroll in the study, offering a paradigm instance of morally justified animal research.

³⁶ We will not discuss cetaceans further because they are rarely if ever subjects of experiments whose purpose is to advance human health. Also, we will sometimes use the term "ape" as shorthand for "great ape" (despite our exclusion of the "lesser ape" species of gibbons and siamangs).

³⁷ Paola Cavalieri and Peter Singer (eds.), *The Great Ape Project* (New York: St. Martin's, 1993).

One might aptly characterize them as *borderline persons*: beings who lie ambiguously between those who are clearly persons and those who are clearly not. To varying degrees, they have several traits that are closely associated with personhood, construed in terms of the capacity for narrative identity: agency, self-awareness, and sociability. The relevance of self-awareness to this capacity is obvious. In addition, agency is relevant to the extent that individuals with narrative identities have intentions and plans while sociability is relevant in that such individuals tend to see certain enduring relationships as important to their identities.

Although their agency – their capacity for intentional action – is apparent in virtually everything great apes do, it is especially evident in activities that display unusual deliberateness, reasoning, or planning. For example, chimpanzees regularly use tools, such as stems as probes for insects, moss for sponges, and rocks as nutcrackers.³⁸ Meanwhile, most or all ape species engage in social manipulation, including deception, of their associates in pursuit of goals.³⁹ Apes are also self-aware in a couple of ways. A type of bodily agential self-awareness is apparent in their carrying out of intentional actions and sequences of actions. Such self-awareness is emphatically displayed in apes' imitation of others' bodily gestures,⁴⁰ use of mirrors to investigate otherwise inaccessible markings on their own bodies,⁴¹ and use of televised images of their arms to reach objects when (in a laboratory setting) their arms and the objects were not directly in view.⁴²

Another type of self-awareness – social self-awareness, or awareness of oneself as positioned within a set of social relationships – is more directly relevant to the possibility of narrative self-awareness and is attributable on the basis of certain complex social behaviors. Chimpanzees, bonobos, and gorillas are highly social creatures. Orangutans are semi-solitary yet they engage in significant social interactions within small groups as well.

³⁸ See, e.g., W. C. McGrew, *Chimpanzee Material Culture* (Cambridge: Cambridge University Press, 1992), 44–46.

³⁹ See, e.g., Richard Byrne, “The Misunderstood Ape: Cognitive Skills of the Gorilla,” in Anne Russon, Kim Bard, and Sue Taylor Parker (eds.), *Reaching into Thought* (Cambridge: Cambridge University Press, 1996), 111–130; Frans de Waal, *Bonobo* (Berkeley: University of California Press, 1997), 39–40; and Michael Tomasello and Josep Call, *Primate Cognition* (New York: Oxford University Press, 1997), 235–259.

⁴⁰ For a summary of the evidence, see Steven Wise, *Rattling the Cage* (Cambridge, MA: Perseus, 2000), 204–205.

⁴¹ See Gordon Gallup, “Self-Recognition in Primates,” *American Psychologist* 32 (1977): 329–338; and Karyl Swartz, Dena Sarauw, and Sian Evans, “Comparative Aspects of Mirror Self-Recognition in Great Apes,” in Parker, Mitchell, and Miles, *The Mentalities of Gorillas and Orangutans*, 283–294.

⁴² See Tomasello and Call, *Primate Cognition*, 52.

The social lives of great apes – especially the more social species – feature long-term relationships, dominance hierarchies, awareness of kin relationships, non-kin-based alliances, and the tracking of significant interactions such as fights, grooming, and altruism.⁴³

What are the moral implications for the research context of the claim that great apes are borderline persons? If they are persons, they have moral rights of full strength; if they are not persons, their temporal self-awareness is nevertheless substantial enough that their corresponding rights would be similar to those of persons. We therefore suggest that the borderline personhood of great apes justifies research protections that are roughly comparable to those appropriate for young human children. The relevant comparison group, we suggest, is post-infancy children who are too immature for meaningful assent to, or dissent from, participating in research. There may even be some cases in which great ape subjects appear to grasp what involvement in a trial would entail well enough so that assent and dissent become meaningful possibilities. For example, great apes who have entered a cognitive study that involves many individual trials may, after a few trials, understand what continued participation would involve. If so, and if they indicate a clear preference not to participate on a given occasion, their nonverbal dissent should be respected. Illustrating this possibility, in the National Zoo in Washington, DC, orangutans involved in cognitive studies are given the option to join or opt out of particular trials when invited by a staff scientist's familiar hand gesture.

Even more important than considerations of assent and dissent is the matter of what harms or risks of harm great apes may permissibly undergo in research. Like human children, they should be spared from research that poses any significant risk of harm to them except in the case of therapeutic research that represents the individual animal's best veterinary option. Although strict, this standard would not entail the end of research on apes. Appropriate field studies – which involve observing animals in their natural habitats without harming or interfering with them – could continue. Studies involving captive apes or apes in sanctuaries could meet this standard if the study is low-risk and their living conditions meet their basic needs and give them good lives. What would end is nontherapeutic invasive research involving great apes. The United States has already severely curtailed – and for all practical purposes terminated – such

⁴³ For helpful overviews, see Jane Goodall, *The Chimpanzees of Gombe* (Cambridge, MA: Harvard University Press, 1986); de Waal, *Bonobo*; Russon, Bard, and Parker, *Reaching into Thought*; and Parker, Mitchell, and Myles (eds.), *The Mentalities of Gorillas and Orangutans*.

research with chimpanzees.⁴⁴ The European Union has largely ended such research with great apes in general but explicitly allows for the possibility of carefully documented exceptions if necessary for preservation of an ape species or as the only viable method to fight “a life-threatening, debilitating condition endangering human beings.”⁴⁵ We find the US exemption of chimpanzees an admirable step in the direction of moral progress and the EU’s approach even better in covering all great apes. Our approach, based on an explicit acknowledgment of great apes’ moral status, goes a bit farther than the EU in not acknowledging justified exceptions.

⁴⁴ See Committee on the Use of Chimpanzees in Biomedical and Behavioral Research, Institute of Medicine (now Academy of Medicine), *Chimpanzees in Biomedical and Behavioral Research* (Washington, DC: National Academies Press, 2011); National Institutes of Health, Office of the Director “Statement by NIH Director Dr. Francis Collins on the Institute of Medicine Report Addressing the Scientific Need for the Use of Chimpanzees in Research,” December 15, 2011 (available at www.nih.gov/news/health/dec2011/od-15.htm); and the follow-up report, Council of Councils, National Institutes of Health, *Council of Councils Working Group on the Use of Chimpanzees in NIH-Supported Research: Report*, 2013 (available at https://dpcpsi.nih.gov/council/pdf/FNL_Report_WG_Chimpanzees.pdf).

⁴⁵ “Directive 2010/63/EU on the Protection of Animals Used for Scientific Purposes,” *Official Journal of the European Union* L 276/33-276/79, adopted September 22, 2010 (available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0063>), p. 276/35).